Advanced Data Formatting: Overview

Advanced Data Formatting (ADF) is a means of customizing data before it is transmitted to your host device. Scan and magstripe data can be edited to suit your particular requirements.

ADF is implemented with a series of bar codes. Programming your RL 470 base interface using this method involves scanning a series of bar codes that coincide with the selectable parameters. An *Input Source* must be selected first. A beeper table on pages ADF-5 - ADF-6 will help guide you through the programming steps.

Rules

To build a rule, you must select Criteria and Actions. The rules you enter must be logically correct. Criteria include *Input Source*, *Code Type*, and *Code Length*. Actions are any alterations related to, or affecting these Criteria. Criteria, Actions, and entire Rules may be erased by scanning the appropriate bar code.

Criteria

Input Source

Select a single input or multiple source to be affected by this customized programming format. *An input source must be selected prior to creating any ADF rules.*

Code Types

Select any number of code types to be affected. All selected codes must be scanned in succession, prior to selecting other criteria. If you don't select a code type, all code types will be affected.

Code Length

Define the number of characters the selected code type must contain. You can select multiple lengths for each rule. If you don't select a code length, selected code types of any length will be affected.

Actions

Select how to format the data for transmission.

Send Data - Send all data that follows, send all data up to a specific character selected from the *alphanumeric keyboard* bar code, or send the next N characters. N = any number from 1 to 254, selected from the *alphanumeric keyboard*.

Setup Field(s) - Select predefined magstripe fields (Track 1 or Track 2, Acct Nr., Exp Data MMYY/YYMM, or Customer Name), or define fields as follows:

Send Keystroke - Scan the "Send __" bar code for the keystroke you wish to send.

Setup Pause - Set the Pause Duration parameter on pages B25-B26 in the Bar Code Pages prior to entering ADF. To insert a pause, scan the Send Pause bar code.

Send Preset Value - Send Values 1 through4 by scanning the appropriate bar code. These values must be set in the Prefix/Suffix parameter located in the *LS 3070 Product Reference Guide*, on pages 7-41 - 7-43.

Value 1 = Scan Suffix

Value 2 = Scan Prefix

Value 3 = Magstripe Suffix

Value 4 = Magstripe Prefix

Rules Hierarchy (in Bar Codes)

When rules are created, they are stored at the "top" of a rules list. If three rules have been created, the list would be configured as follows:

Third Rule
Second Rule
First Rule

All inputs will check the rules list from top to bottom to determine if the criteria matches (and therefore, if the actions should occur). This illustrates the importance of the order in which the rules were created. Input data will be modified into the form of the first matching set of criteria it finds.

For example, if the THIRD rule states:

> When scanning a bar code of any length, send all data, then send the ENTER key.

And the SECOND rule states:

> When scanning a Code 128 bar code of length 12, send the first four characters, then send the ENTER key, then send all remaining data.

If a Code 128 bar code of length 12 were scanned, the THIRD rule would be in effect. The SECOND rule would appear to not function.

Note also that ADF Rules are actually created when you use the standard data editing functions. Scan and magstripe options are entered as ADF rules, and the hierarchy mentioned above also applies to them. These rules reside in the same "rule list" as ADF Rules, so the order of their creation is also important.

Default Rules

Every unit has a default rule to send all data, regardless of the source. Units with custom software may have one or more default rules programmed in. The rules hierarchy will check user programmable rules first, then the default rules. Default rules can be disabled by entering the following general rule in the user programmable buffer:

When receiving data from any source, send all data.

Since this rule always applies, ADF will never go into the default rules.

Beeper Definitions

Normal Data Entry. Duration of tones are short.

BEEPER SEQUENCE	INDICATION
High-Low	Entry of a number is expected. Enter another digit. Add leading zeros to the front if necessary.
Low-Low	Entry of an alphabetic character is expected. Enter another character or scan the END OF MESSAGE bar code.
High-High	Entry of Criterion/Action is expected. Enter another criterion or action, or scan the SAVE RULE bar code.
High-Low-High-Low	Rule saved. Rule entry mode exited.
High-Low-Low	All criteria or actions were cleared for rule currently being entered; continue entry of rule.
Low	Last saved rule was successfully deleted. The rule presently being entered is left intact.
Low-High-High	All rules are now deleted. The rule presently being entered is left intact. (This beep sequence has a different meaning outside of ADF.)

Beeper Definitions

Error Indications. Duration of tones are very long.

BEEPER SEQUENCE	INDICATION
Low-High-Low-High	Out of rule memory. Erase some existing rules, then try to save rule again. (The current rule need not be re-entered.)
Low-High-Low	Cancel rule entry. Rule entry mode exited because of an error or the user asked to exit rule entry.
Low-High	Entry error, wrong bar code scanned. Re-enter criterion or action. All previously entered criteria and actions are retained. Criteria or action list is too long for a rule.

ADF Bar Code Menu Example

This section will show you specifically how ADF rules are entered and used. Examples are given for each of the three data sources.

Formatting Scan Data

A local men's clothing store wants to encode a vendor number, size, and color code into their own Code 128 bar codes. The store also has products that carry UPC bar codes, placed there by the manufacturer. The Code 128 bar codes have the following format:

VVVVV SSSSCC

Where V = Vendor Code
S = Size Code
C = Color Code

The store uses an NCR 7052 cash register with buttons for vendor [F1], size [F2], and color code [F3]. At this store the UPC data is treated as one vendor code.

The following rules need to be entered:

When scanning data, and the code type is Code 128, send the next 5 characters, send the vendor key [F1], send the next 4 characters, send the size key [F2], send the next 2 characters, send the color code key [F3].

When scanning data, and the code type is UPC/EAN, send all data, send the vendor key [F1].

To enter these rules, follow the steps below:

Rule 1: The Code 128 Scanning Rule

Step	Bar Code	On Page	Beep Indication
1	Scanner Port	A-4	High High
2	Code 128	A-5	High High
3	Send next 5 characters	A-15	High High
4	Send F1	A-68	High High
5	Send next 4 characters	A-14	High High
6	Send F2	A-68	High High
7	Send next 2 characters	A-14	High High
8	Send F3	A-68	High High
9	Save Rule	A-2	High Low High Low

Rule 2: The UPC Scanning Rule

Step	Bar Code	On Page	Beep Indication
1	Scanner Port	A-4	High High
2	UPC/EAN	A-6	High High
3	Send all data that remains	A-14	High High
4	Send F1	A-68	High High
5	Save Rule	A-2	High Low High Low

If you made any mistakes while entering this rule, scan "Quit Entering Rules" on page A-2.

Formatting Magstripe Data

A small department store chain called "the STORE" accepts all major credit cards, and their own credit card. They use a dual track magstripe reader with their Symbol product.

The major credit cards follow the standard encoding methods, but the store card is different. The word "STORE" appears in track 1 to identify the store's card. The two tracks of data contain the following information:

Track 1: >STORE - Last Name - First Name - Title<
Track 2: >Account Number - Social Security Number - Exp. Date<

A sample store credit card would look like this:

Track 1: >STORE - SMITH - JOHN - DR<
Track 2: >123456789012 - 111223333-1293<

The STORE's point of sale terminal has a "store credit card" key (F5), and a "bank credit card" key (F6). These keys are pressed before the credit card data is sent. If a STORE credit card is read, the following data is sent:

[F5] Account Number [ENTER] Last Name, First Name [ENTER]

Bank credit cards are sent as follows:

[F6] Account Number [ENTER] Customer Name [ENTER]

The following rules need to be entered:

When dual magstripe data is read, send the [F5] key, select track 2, skip ahead 1 character, send all data up to "-", send the [ENTER] key, Select track 1, skip all data up to "-", send all data up to "-", send a comma, send all data up to dash, send [ENTER] key.

The bank credit card rule was easier to enter because the card uses standard magstripe encoding. The order in which the rules are entered is important. The bank

card rule must be entered first, followed by the store credit card rule. This way the store credit rule is checked first. If the store rule fails, the more general bank card rule would apply. If the rules were entered in reverse, the bank rule would always be executed, and the store rule would be ignored.

Rule 3: The Bank Credit Card Rule

Step	Bar Code	On Page	Beep Indication
1	Dual Magstripe Reader	A-3	High High
2	Send F6	A-69	High High
3	Send account number	A-18	High High
4	Send Enter key	A-66	High High
5	Send Exp Date MMYY	A-18	High High
6	Send Enter key	A-66	High High
7	Send Customer's Name	A-19	High High
8	Send Enter key	A-66	High High
9	Save Rule	A-2	High Low High Low

Rules are limited to approximately 15 action entries and 15 criteria entries. Most units have enough storage space for up to 20 average sized rules.

The previous examples cover the two major sources of input into your LS 3070. It is not necessary to enter a rule for each input. A default rule will send input data exactly as it is received. You may have multiple rules for a particular input source. But be aware of the rule entry order. The last rule entered is the first rule checked when scan or magstripe data is read.